

## Lowered serum cholesterol and low mood

*The link remains unproved*

See p 649, 664

Reducing serum cholesterol has long been seen as a desirable goal, particularly for those with high concentrations of serum cholesterol and a history of atherosclerotic disease. Recently, the value of lowering (or low) serum cholesterol concentrations has been called into question. A meta-analysis of six primary prevention trials suggested that coronary heart disease mortality tended to be lower in men who were treated with cholesterol lowering regimens, but that the overall mortality did not decline because of a significant increase in deaths from external causes (accidents, suicide, or homicide).<sup>1</sup> This increased risk for violent death was apparent whether cholesterol lowering was by drug or dietary intervention. Subsequent studies on this phenomenon have not resolved the issue but have caused further debate on the design and meaning of each study as well as the central issue of whether low serum cholesterol is a desirable goal.

### Mechanisms

Because death from external causes has a behavioural component, the search for an explanation of the association between low cholesterol concentrations and these deaths has focused on the possibility that lowering or low cholesterol concentrations influence mood or behaviour. The proposed mechanism for this effect on mood has been a change in neuronal membrane fluidity and subsequent alteration in serotonin binding, reuptake, or metabolism,<sup>2</sup> but there is no agreement that this is a valid explanation.<sup>3-4</sup> A further problem is that death by external causes is an artificial grouping of deaths that do not share a common aetiology. Establishing a biologically plausible link between those who die by suicide, which may be associated with depression, and those who are victims of accidents or homicide presents a further challenge. While there is some basis for believing that some accidents have a behavioural component (which might be influenced by cholesterol concentration) it is less clear that murder victims could have prevented their misfortune if their cholesterol concentrations were higher. Well conducted primary prevention trials are an imposing source of evidence, but a review of individual deaths due to external causes in two of these trials led the authors to suggest that other factors played a role.<sup>5</sup>

Two studies published in this week's *BMJ* shed further light on the puzzling issue of cholesterol concentrations and depressive symptoms or suicide. In the first of these studies, pregnancy is used as a natural model for the effect on mood of a reduction in cholesterol because of the rapid physiological drop in serum cholesterol and triglyceride concentrations postpartum.<sup>6</sup> Ploekinger *et al* (p 664) found that the absolute postpartum cholesterol concentration was not associated with

depressive symptom scores measured on the Zung self rating depression scale but that relative decrease in serum cholesterol from two weeks prepartum was significantly correlated with postpartum depressive scores. In the second report, based on a longitudinal cohort study of French men (p 649), Zureik *et al* used measurements of serum cholesterol concentration from at least three examinations to calculate an average annual change in serum cholesterol.<sup>7</sup> The mean of these values was negative in men who had committed suicide, in contrast with the positive mean from others. The findings in these two separate studies support a hypothesised relation between lowered serum cholesterol and depressive symptoms and suicide.

These studies add to the debate, but they cannot rule out other factors that may have influenced the outcome. In the study by Zureik *et al*, for example, it was not possible to adjust for illness or poor health, which may be a confounder. This is important because other studies have shown that the association between low serum cholesterol and depressive symptoms can be explained by confounders such as poor health.<sup>8</sup> It is not outlandish to suggest that men who are ill may be depressed and that this has influenced their appetite and hence cholesterol concentrations.

Randomised placebo controlled clinical trials are considered to be the gold standard for study design. A recently published randomised trial of cholesterol lowering by simvastatin included outcomes such as scores on a modified mood states questionnaire and use of psychotropic drugs.<sup>9</sup> The results of this study indicated that there were no significant differences between treatment groups and controls in the results of psychometric testing or in the use of psychotropic drugs.

### Clarify the problem

Given the proliferation of papers<sup>10</sup> and the keen interest in this subject, one would think that we would be closer to knowing whether lowering or low serum cholesterol poses a risk for death from external cause. Part of our problem in reaching a consensus may be that we are really discussing different issues. Perhaps it is time to evaluate whether we see an increase in mortality associated with cholesterol lowering if we only consider deaths that can be attributed to behaviour on the part of the deceased. This would mean excluding some accidental deaths and most homicides. If there was still an increased risk for deaths with a behavioural component among groups given cholesterol lowering treatment then we should agree on the definition of the problem (a hypothesis) and appropriate means for studying it. It is time to evaluate what we have done

and come to a consensus on what studies need to be done and how to do them. It is unlikely that we shall reach agreement otherwise.

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This editorial reflects the private views of the author and conveys neither official endorsement nor criticism by the US Department of Health and Human Services, the Public Health Service, or the Food and Drug Administration.

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## Summative assessment in general practice

### *Much to learn from new scheme*

This month sees the introduction of a new system of summative assessment of training for general practitioners in Britain. Under the old system registrars in general practice collected the signatures of hospital consultants and general practitioner trainers certifying that they had satisfactorily completed a minimum of three years of experience in approved training posts.<sup>1</sup> Now, doctors who want to be eligible to become principals in general practice must satisfy the Joint Committee on Postgraduate Training for General Practice (JCPTGP) that they have adequate knowledge, consulting skills, and clinical competence for the role.

Such knowledge and competence will be assessed by multiple choice questions and a videotaped assessment of consulting skills, together with a written report of practical work in general practice and a structured report of performance in practice from the registrar's trainer.<sup>2</sup> The assessments are being organised at regional level, with the joint committee confining its role to inspection and standardisation.<sup>3</sup>

Concern that the old system of assessment in Britain may have allowed registrars of poor quality to slip through the net drove the introduction of the new scheme. Reports of individual patient tragedies at the hands of doctors who had only recently received their certificate from the Joint Committee on Postgraduate Training for General Practice,<sup>4,5</sup> the low rate of refusal of certification (only 16 of 6200 registrars were denied their trainer's signature on completion of the vocational year in practice during 1990-5 (T S Murray, unpublished data)), and a survey which showed that many general practise trainers regarded the certificate as insufficient proof of competence to practise<sup>6</sup> led to pressure for a new system of assessment.

The examination for Membership of the Royal College of General Practitioners (MRCGP) has been considered as the instrument of assessment, but its standard is for excellence rather than minimum competence. The college believes that, while "in time it will be usual for new principals to hold the MRCGP, it should not be mandatory for entry to NHS general practice" (W M Styles, statement of chairman of council 1996). However, the college has modified its examination so that its new part A (clinical assessment and multiple choice questions) will enable successful candidates to gain exemption from similar components of their regional summative assessment (W M Styles).

The region with most experience of summative assessment is west Scotland, where, for the past three years, all registrars have had to complete a pilot assessment package on which

most new regional schemes will be based.<sup>5</sup> Of the 359 registrars who completed this package, 17 were judged to have fallen below the level of minimum acceptable competence, but 10 of the 17 were signed up by their trainers as competent to practice. The authors of the west Scotland study suggest that this is further evidence that the close relationship between trainer and registrar militates against objective assessment, necessitating external quality control.

Despite the perceived need for enhanced accreditation before registrars can start independent practice, many problems remain. Although basic competence is to be assessed by reference to standard criteria, potentially enabling a 100% pass rate, the credibility of the exercise will rest on the willingness of the assessors to fail some registrars. If experience in west Scotland is broadly applicable to the rest of Britain about 5% of registrars will fail the assessment each year and will have to be offered an extension of training.<sup>5</sup>

Although all those concerned with the process want to ensure that failed registrars receive further training, in the absence of any regulatory changes the only way that a registrar could obtain funding for further training for this is to appeal to the secretary of state for health with the support of a recommendation from the joint committee. This situation is unlikely to change in the near future as the Department of Health has yet to find parliamentary time to amend either the vocational training regulations or the "Red Book," which governs payments for training in general practice.<sup>7</sup> Because of this, the subcommittee that represents registrars nationally has opposed the implementation of summative assessment, while also expressing concern at its lack of validation and the poor communication over its implementation.<sup>8</sup>

Although summative assessment has brought beneficial changes—far more registrars in west Scotland now have regular training in consultation skills using videotapes, for example—there are reasons to doubt whether its implementation will truly enhance education in general practice overall. By definition, doctors are good at passing exams. Batteries of tests are unlikely to worry most registrars but may postpone the moment at which "the mask of relaxed brilliance"<sup>9</sup> is dropped to enable the development of patterns of adult learning.<sup>10</sup> The registrar year is likely to be disrupted as examination based assessments command the energies of both registrars and those who educate them at the expense of other activities. Those who compete for funding from the regional budgets which bear the costs of assessment—estimated at £165 for each registrar (T S Murray, unpublished data)—may also feel that the resources could be better used on improving hospital